DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
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Flex your power!
Be energy efficient!

November 16, 2011

03-Sac-80, 244-VAR
03-2F0404
Project ID 0300020451
IM-0803(241)E

Addendum No. 4

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN SACRAMENTO COUNTY IN AND NEAR CITRUS HEIGHTS ON ROUTE 80 BETWEEN MADISON AVENUE OVERCROSSING AND 0.3 MILES WEST OF SOUTH ROSEVILLE OVERCROSSING AND ON ROUTE 244 BETWEEN WATT AVENUE AND AUBURN BOULEVARD.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on Wednesday, November 30, 2011.

This addendum is being issued to revise the Project Plans, the Notice to Bidders and Special Provisions, and the Bid book. And to revise the Federal Minimum Wages with Modification Number 33 dated 11/04/2011.

Project Plan Sheets 1, 3, 4, 6, 8, and 13 are revised. Copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheets 11A, 11B, 11C, 11D, 11E, 11F, 11G, 11H, 11I, 11J, 11K, 11L, 11M, 11N and 11O are added. Copies of the added sheets are attached for addition to the project plans.

In the Notice to Bidders, the twelfth paragraph is revised as follows:

"The estimated cost of the project is $ 7,000,000."

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In the Special Provisions, Section 10-1.11, "CLOSURE REQUIREMENTS AND CONDITIONS," subsection "LATE REOPENING OF CLOSURES," the second paragraph is revised as follows:

"For each 10-minute interval, or fraction thereof past the time specified to reopen the closure, the Department will deduct the amount per interval shown below from moneys due or that may become due the Contractor under the contract. Damages are limited to 5 percent of project cost per occurrence and will not be assessed when the Engineer requests that the closure remain in place beyond the scheduled pickup time.

Type of Facility	Route or Segment	Period	Damages/interval ($)
Mainline	I-80 & SR-244	1st half hour 2nd half hour 2nd hour and beyond	$1400/ 10 minutes $2100/ 10 minutes $2800/ 10 minutes

"

In the Special Provisions, Section 10-1.13, "TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE," subsection "STATIONARY LANE CLOSURE," the following paragraph is added after the second paragraph:

"The 1,700-foot section of a lane closure, shown along lane lines between the 1,000-foot lane closure tapers on the standard plans entitled "Traffic Control System for Lane Closures on Freeways and Expressways" and "Traffic Control System for Lane and Complete Closures on Freeways and Expressways" shall not be used."

In the Special Provisions, Section 10-1.17, "REMOVE YELLOW TRAFFIC STRIPE AND PAVEMENT MARKING (HAZARDOUS WASTE)," is deleted.

In the Special Provisions, Section 10-1.25, "SEAL EXISTING CONCRETE PAVEMENT JOINT," subsection "MATERIALS," sub-subsection "Backer Rods," the first paragraph and the sub-heading is deleted.

In the Special Provisions, Section 10-1.25, "SEAL EXISTING CONCRETE PAVEMENT JOINT," subsection "PREPARE JOINTS IN EXISTING CONCRETE PAVEMENT," the first paragraph is revised as follows:

"Transverse pavement joint seals shall be liquid sealant and shall be as shown on the plans. Longitudinal joint seals shall be liquid sealant and shall be as shown on the plans."

In the Special Provisions, Section 10-1.25, "SEAL EXISTING CONCRETE PAVEMENT JOINT," subsection "PREPARE JOINTS IN EXISTING CONCRETE PAVEMENT," sub-subsection "Backer Rod Installation," the first paragraph and the sub-heading is deleted.

In the Special Provisions, Section 10-1.27, "GRIND AND GROOVE EXISTING CONCRETE PAVEMENT," subsection "CONSTRUCTION," sub-subsection "Payment," the second paragraph is revised as follows:

"Full compensation for providing traffic control for the Engineer to perform inspections and quality control testing shall be considered as included in the contract price paid for the work involving grind and groove existing concrete, and no additional compensation will be allowed therefor."

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In the Special Provisions, Section 10-1.10, "MAINTAINING TRAFFIC," Traffic Charts No. 1 to 6 are revised as attached.

In the Special Provisions, Section 10-1.18, "EXISTING HIGHWAY FACILITIES", subsection "COLD PLANE ASPHALT CONCRETE PAVEMENT," is revised as attached.

In the Special Provisions, Section 10-1.205, "MINOR HOT MIX ASPHALT," is added as attached.

In the Special Provisions, Section 10-1.24, "REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE)," is revised as attached.

In the Bid book, in the "Bid Item List," Item 11, 14, 16, 21, 22 and 23 is revised. Items 36 and 37 are added. Item 35 is deleted as attached.

To Bid book holders:

Replace the entire pages of the "Bid Item List" in the Bid book with the attached revised pages of the Bid Item List. The revised Bid Item List is to be used in the bid.

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the Notice to Bidders section of the Notice to Bidders and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the Bid book.

Submit bids in the Bid book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This addendum, attachments and the modified wage rates are available for the Contractors' download on the Web site:

http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/03/03-2F0404

If you are not a Bid book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

Steven E Kilpatrick

for JODY JONES
District Director

Attachments

Chart No. 1
Freeway/Expressway Lane Requirements

County: SAC	Route/Direction: I-80/ EB	PM: 12.4-18.0

Closure Limits: I- 80/EB -PM Sac /11.5- PLA /0.7

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	1	1	1	1	1	2																	3	2	
Fridays	1	1	1	1	1	2																		3	
Saturdays	2	1	1	1	1	1	2																	2	
Sundays	2	1	1	1	1	1	2	2														3	2	2	

Legend:

1	Provide at least one through freeway lane, not less than 11 feet in width, open in direction of travel.
2	Provide at least two through freeway lanes, not less than 11 feet in width, open in direction of travel.
3	Provide at least three through freeway lanes, not less than 11 feet in width, open in direction of travel.
	Work permitted within project right of way where shoulder or lane closure is not required.

- REMARKS:
- At least 4 lanes are available on direction of travel.
- Adjacent ramp closures will be allowed during lane closure and as directed by the Engineer.
- See Lane closure restriction for designated legal holidays and special days table in maintain traffic of these special provisions for additional closure restrictions.

Chart No. 2
Freeway/Expressway Lane Requirements

County: SAC	Route/Direction: I-80/WB	PM: 12.4-18.0

Closure Limits: I- 80/WB -PM Sac /11.5- PLA /0.7

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	1	1	1	1	2																	3	2	2	
Fridays	1	1	1	1	1																		3	2	
Saturdays	2	1	1	1	1	1	2	3																2	
Sundays	2	1	1	1	1	1	2	2	3													3	2	2	

Legend:

1	Provide at least one through freeway lane, not less than 11 feet in width, open in direction of travel.
2	Provide at least two through freeway lanes, not less than 11 feet in width, open in direction of travel.
3	Provide at least three through freeway lanes, not less than 11 feet in width, open in direction of travel.
	Work permitted within project right of way where shoulder or lane closure is not required.

- REMARKS:
- At least 4 lanes are available on direction of travel.
- Adjacent ramp closures will be allowed during lane closure and as directed by the Engineer.
- See Lane closure restriction for designated legal holidays and special days table in maintain traffic of these special provisions for additional closure restrictions.

Chart No. 3
Freeway/Expressway Lane Requirements

County: SAC	Route/Direction: SR 244 EB/WB	PM: 0.0-1.1

Closure Limits: SR 244/NB - PM 0.0-1.1

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	1	1	1	1	1	1	2														2	1	1	1	
Fridays	1	1	1	1	1	1	2																1	1	
Saturdays	1	1	1	1	1	1	1	2															1	1	
Sundays	1	1	1	1	1	1	1	1	2												2	1	1	1	

Legend:

1	Provide at least one through freeway lane, not less than 11 feet in width, open in direction of travel.
2	Provide at least two through freeway lanes, not less than 11 feet in width, open in direction of travel.
	Work permitted within project right of way where shoulder or lane closure is not required.

- REMARKS:
- At least 2 lanes are available on direction of travel.
- See Lane closure restriction for designated legal holidays and special days table in maintain traffic of these special provisions for additional closure restrictions.

Chart No. 4
Complete Ramp Closure Hours/Ramp Lane Requirements

County: SAC	Route/Direction: I-80/EB	PM: 12.4-18.0

Closure Limits: EB I-80 off - ramp to Greenback Lane & Elkhorn Blvd.
EB I-80 on - ramp From Greenback Lane.
EB I-80 on - ramp From Elkhorn Blvd.
EB I-80 off - ramp to Antelope Rd.
EB I-80 loop on - ramp from Antelope Rd.

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays Through Thursdays	C	C	C	C	C	C																	C	C	
Fridays	C	C	C	C	C	C																		C	
Saturdays	C	C	C	C	C	C	C																	C	
Sundays	C	C	C	C	C	C	C	C															C	C	

Legend:

C	Ramp may be closed completely
	No work permitted

- REMARKS:
- Only one ramp can be closed at a time at this interchange, all other ramps have to be open for public traffic.
- When a ramp is closed, public traffic shall be detoured to the preceding ramp or next ramp and detour must be available and in place.
- Auxiliary lane closure is allowed during ramp closure as directed by the Engineer.
- See Lane Closure Restriction for Designated Legal Holidays and Special Days Table in Maintain Traffic of these special provisions for additional closure restrictions.

Chart No. 5
Complete Ramp Closure Hours/Ramp Lane Requirements

County: SAC	Route/Direction: I-80/WB	PM: 12.4-18.0

Closure Limits: WB I-80 off - ramp to Antelope Rd.
WB I-80 loop on - ramp from E. Antelope Rd.
WB I-80 on- ramp from W. Antelope Rd.
WB I-80 off - ramp to Greenback Lane & Elkhorn Blvd.
WB I-80 loop on - ramp From Greenback Lane.
WB I-80 on - ramp From Elkhorn Blvd.

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays Through Thursdays	C	C	C	C	C																	C	C	C	
Fridays	C	C	C	C	C	C																		C	
Saturdays	C	C	C	C	C	C	C																	C	
Sundays	C	C	C	C	C	C	C															C	C	C	

Legend:

C Ramp may be closed completely

No work permitted

- REMARKS:
- Only one ramp can be closed at a time at this interchange, all other ramps have to be open for public traffic.
- When a ramp is closed, public traffic shall be detoured to the preceding ramp or next ramp as directed by the Engineer, and detour must be available and in place.
- Auxiliary lane closure is allowed during ramp closure as directed by the Engineer.
- See Lane Closure Restriction for Designated Legal Holidays and Special Days Table in Maintain Traffic of these special provisions for additional closure restrictions.

Chart No. 6
Complete Ramp Closure Hours/Ramp Lane Requirements

County: SAC	Route/Direction: SR 244 / WB	PM: 0.0-1.1

Closure Limits:
EB I-80 on- ramp from WB / SR 244.

FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays Through Thursdays	C	C	C	C	C																	C	C	C	
Fridays	C	C	C	C	C	C																		C	
Saturdays	C	C	C	C	C	C	C																	C	
Sundays	C	C	C	C	C	C	C	C														C	C	C	

Legend:

C Ramp may be closed completely

No work permitted

- REMARKS:
- Only one ramp can be closed at a time, all other ramps have to be open for public traffic.
- When a ramp is closed, public traffic shall be detoured as in the detour plans or as directed by the Engineer, and detour must be available and in place when ramp is closed.
- Auxiliary lane closure is allowed during ramp closure as directed by the Engineer.
- See Lane Closure Restriction for Designated Legal Holidays and Special Days Table in Maintain Traffic of these special provisions for additional closure restrictions.

10-1.18 COLD PLANE ASPHALT CONCRETE PAVEMENT

GENERAL

Summary

This work includes cold planing existing asphalt concrete pavement.

Sequencing and Scheduling

Schedule cold planing activities so that not more than 72 hours elapses between the time the pavement is cold planed and the HMA is placed.

No cold planed area shall remain exposed during weekend traffic periods and Designated Legal Holidays and Special Days.

MATERIALS

HMA for temporary tapers must be of the same quality as the HMA used elsewhere on the project or comply with "Minor Hot Mix Asphalt" of these special provisions.

CONSTRUCTION

General

Perform planing of asphalt concrete pavement without the use of a heating device to soften the pavement.

Cold Planing Equipment

Cold planing machine must be:

1. Equipped with a cutter head width that matches the planing width. If the only available cutter head width is wider than the cold plane area shown, submit to the Engineer a request for using a wider cutter head. Do not cold plane until the Engineer approves your request.
2. Equipped with automatic controls to control the longitudinal grade and transverse slope of the cutter head and:

    2.1. If a ski device is used, it must be at least 30 feet long, rigid, and 1 piece unit. The entire length must be used in activating the sensor.

    2.2. If referencing from existing pavement, the cold planing machine must be controlled by a self-contained grade reference system. The system must be used at or near the centerline of the roadway. On the adjacent pass with the cold planing machine, a joint matching shoe may be used.

3. Equipped to effectively control dust generated by the planing operation.
4. Operated so that no fumes or smoke is produced.
5. Bullet tooth tools with tungsten carbide steel cutting tips.
6. A maximum tool spacing of 1/4 inch.
7. New tools at the start of the job.

Replace broken, missing, or worn machine teeth.

Grade Control and Surface Smoothness

Furnish, install, and maintain grade and transverse slope references.

The depth, length, width, and shape of the cut must be as shown or as ordered. The final cut must result in a neat and uniform surface. Do not damage remaining surface.

The completed surface of the planed asphalt concrete pavement must not vary more than 0.02 foot when measured with a 12-foot straightedge parallel with the centerline. The transverse slope of the planed surface must not vary more than 0.03 foot from the straightedge when placed at right angles to the centerline.

A drop-off of more than 0.15 foot is not allowed between adjacent lanes open to public traffic.

Temporary HMA Tapers

If a drop-off between the existing pavement and the planed area at transverse joints cannot be avoided before opening to traffic, construct a temporary HMA taper. HMA for temporary taper must be:

1. Placed to the level of the existing pavement and tapered on a slope of 30:1 (Horizontal: Vertical) or flatter to the level of the planed area
2. Compacted by any method that will produce a smooth riding surface
3. Completely removed before placing the permanent surfacing. The removed material must be disposed of outside the highway right of way in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Disposal of Planed Material

The Contractor shall submit to the Engineer a Debris and Dust Removal Plan for acceptance 14 days prior to beginning cold plane operations. The Debris and Dust Removal Plan shall be a written detail of how the Contractor proposes to remove and control debris and dust during and after cold plane operations, including number and type of equipment used and timing of the operations on a daily basis, and shall include the contact information for the Contractor's Claim or Loss Control Agent.

Remove cold planed material concurrent with planing activities, within 50 feet of the planer or as ordered.

Dispose of planed material and under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

MEASUREMENT AND PAYMENT

Cold plane asphalt concrete pavement is measured by the square yard.

The contract price paid per square yard for cold plane asphalt concrete pavement includes full compensation for furnishing all labor, materials, tools, equipment, the Debris and Dust Removal Plan, and incidentals, and for doing all the work involved in cold planing asphalt concrete surfacing and disposing of planed material, including constructing, maintaining, removing temporary HMA tapers if applicable, as specified in the Standard Specifications and these special provisions and as directed by the Engineer.

Full compensation for removal of thermoplastic traffic stripe, painted traffic stripe, and pavement marking in areas of cold plane asphalt concrete is included in the contract price paid for cold plane asphalt concrete and no separate payment will be made therefor.

10-1.205 MINOR HOT MIX ASPHALT

GENERAL

Summary

This work includes producing hot mix asphalt (HMA) at a central mixing plant and placing it as specified.

MATERIALS

For minor HMA:

1. Do not submit a job mix formula.
2. Choose the 3/8-inch or 1/2-inch HMA Type A or Type B aggregate gradation under Section 39-1.02E, "Aggregate," of the Standard Specifications.
3. Minimum asphalt binder content must be 6.8 percent for 3/8-inch aggregate gradation and 6.0 percent for 1/2-inch aggregate gradation.
4. Choose asphalt binder Grade PG 64-10, PG 64-16, or PG 70-10 under Section 92, "Asphalts," of the Standard Specifications.

Tack coat must comply with Section 39, "Hot Mix Asphalt," of the Standard Specifications.

MEASUREMENT AND PAYMENT

The contract item price paid per ton for minor hot mix asphalt includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in minor hot mix asphalt complete in place including tack coat, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

10-1.24 REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE)

GENERAL

Summary

This work includes removing existing concrete pavement and underlying cement treated base and constructing rapid strength concrete (RSC) pavement.

Comply with Section 40, "Concrete Pavement," of the Standard Specifications.

Definitions

early age: Time less than 10 times the concrete's final set time.
final set time: Time a specific penetration resistance of 4,000 psi is achieved, determined under ASTM C 403.
opening age: Time the concrete achieves the specified strength for opening to traffic.

Submittals

Mix Design

At least 10 days before use in a trial slab, submit a mix design for RSC that includes:

1. Opening age
2. Proposed aggregate gradation
3. Proportions of hydraulic cement and aggregate
4. Types and amounts of chemical admixtures
5. Maximum time allowed between batching and placing
6. Range of ambient temperatures over which the mix design is effective
7. Final set time
8. Any special instructions or conditions such as water temperature requirements

Submit more than 1 mix design to plan for ambient temperature variations anticipated during RSC placement. Each mix design must have a maximum ambient temperature range of 18 °F.

Submit modulus of rupture development data for each mix design. You may use modulus of rupture development data from laboratory-prepared samples. The testing ages for modulus of rupture development data must include 1 hour before opening age, opening age, one hour after opening age, 24 hours, 7 days, and 28 days.

Trial Slab

Submit split aggregate samples taken during trial slab construction.

Calibration Testing Certificates of Compliance

Submit a Certificate of Compliance under Section 6-1.07, "Certificates of Compliance," of the Standard Specifications with each delivery of aggregate, cement, and admixtures to be used for calibration tests. Submit certified copies of the weight of each delivery. The Certificate of Compliance must state the source of materials used for the calibration tests is from the same source to be used in the work. The Certificate of Compliance must be signed by your authorized representative.

Cement and Admixtures

At least 45 days before intended use, submit a sample of cement from each proposed lot and samples of proposed admixtures in the quantities ordered by the Engineer.

During RSC pavement operations, submit uniformity reports for hydraulic cement at least once every 30 days to the Transportation Laboratory, Attention: Cement Laboratory. Uniformity reports must comply with ASTM C 917, except testing age and water content may be modified to suit the particular material.

Quality Control and Assurance

Pre-operation Conference

Meet with the Engineer at a pre-operation conference at a mutually agreed time and place. Make the arrangements for the conference facility. Discuss methods of performing the work.

Pre-operation conference attendees must sign an attendance sheet provided by the Engineer. The pre-operation conference must be attended by your:

1. Project superintendent
2. Project manager
3. Quality control manager
4. Paving foreman
5. Concrete plant manager
6. Concrete plant operator
7. Personnel performing saw cutting and joint sealing
8. Plant inspector
9. Paving machine operators
10. Inspectors
11. Samplers
12. Testers
13. Subcontractor's workers

Do not start paving activities including test strips until the listed personnel have attended a pre-operation conference.

The purpose of the pre-operation conference is to familiarize personnel with the project's requirements. Items to be discussed include the processes for:

1. Production
2. Transportation
3. Placement
4. Replacing pavement
5. Contingency plan
6. Sampling
7. Testing

Quality Control Managers

For the project, designate a lead Quality Control Manager (QCM) and assistant QCM.

The lead QCM must hold current American Concrete Institute (ACI) certification as "Concrete Field Testing Technician-Grade I" and "Concrete Laboratory Testing Technician-Grade II." Assistant QCMs must hold current ACI certification as "Concrete Field Testing Technician-Grade I" and either "Concrete Laboratory Testing Technician-Grade I" or "Concrete Laboratory Testing Technician-Grade II."

The QCM responsible for the production period involved must review and sign the sampling, inspection, and test reports before submittal to the Engineer. At least 1 QCM must be present for:

1. Each stage of mix design
2. Trial slab construction
3. Production and construction of RSC
4. Meetings with the Engineer relating to production, placement, or testing.

A QCM must not be a member of this project's production or paving crews, an inspector, or a tester. A QCM must have no duties during the production and placement of RSC except those specified.

Quality Control Inspection, Sampling, and Testing

Perform quality control sampling, testing, and inspection throughout RSC production and placement. Before any sampling and testing, give the Engineer at least 2 business days notice. Give the Engineer unrestricted access to your quality control inspectors, samplers, testers, and laboratories. Submit testing results within 15 minutes of testing completion. Record inspection, sampling, and testing on the forms acceptable to Engineer and submit them within 48 hours of completion of each paving shift and within 24 hours of 7-day modulus of rupture tests.

Provide a testing laboratory to perform quality control tests. Maintain sampling and testing equipment in proper working condition. Perform sampling under California Test 125.

Testing laboratories and testing equipment must comply with the Department's Independent Assurance Program.

Trial Slabs

Before starting work on replacement concrete pavement, complete one trial slab for each rapid strength concrete mix design. Trial slabs demonstrate that you are capable of producing replacement concrete pavement in compliance with the specifications within the specified time periods including delivery, placement, finishing, and curing times, and under similar atmospheric and temperature conditions expected during replacement operations.

During trial slab construction, sample and split the aggregate for gradings, cleanness value, and sand equivalent testing.

The trial slab must be at least 10' x 20'. If the planned replacement pavement thickness is less than 10 inches, the trial slab thickness must be at least 9 inches. If the planned replacement pavement thickness is greater than 10 inches, the trial slab thickness must be at least 10 inches. If the thickness of some planned slab replacements is greater than 10 inches and some are less than 10 inches, construct 1 trial slab 10 inches thick and another 9 inches thick. Place trial slabs near the job site at a mutually-agreed location that is neither on the roadway nor within the project limits.

Within 20 minutes after rapid strength concrete delivery for trial slabs, fabricate test beams under California Test 524. Use beams to determine early age and 7-day modulus of rupture values.

Cure beams fabricated for early age testing so that the monitored temperatures in the beams and the trial slab are always within 5 °F. Monitor and record the internal temperatures of trial slabs and early age beams at intervals of at least 5 minutes. Install thermocouples or thermistors connected to strip-chart recorders or digital data loggers to monitor the temperatures. Temperature recording devices must be accurate to within ±2 °F. Measure internal temperatures at 1 inch from the top, 1 inch from the bottom, and no closer than 3 inches from any edge until early age testing is completed.

Cure beams fabricated for 7-day testing under California Test 524 except place them into sand at a time that is from 5 to 10 times the final set time, or 24 hours, whichever is earlier.

Nine-inch thick trial slabs must have an early age modulus of rupture of not less than 400 psi and a 7-day modulus of rupture of not less than 600 psi. Ten-inch thick trial slabs must have an early age modulus of rupture of not less than 333 psi and a 7-day modulus of rupture of not less than 600 psi.

Dispose of trial slabs and test specimens for trial slabs under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Production Process Control and Quality Control Testing

Contingency plan equipment and personnel must be present at the job site.

During production of RSC, sample and test aggregates at least once for every 650 cubic yards of RSC produced, but not less than once per placement shift. Test aggregates for compliance with gradations, cleanness value, and sand equivalent specifications.

At least once for every 650 cubic yards of RSC produced, but not less than twice per placement shift, sample and test for:

1. Yield
2. Penetration
3. Air content
4. Unit weight

During placement of RSC, fabricate beams and test for modulus of rupture within the first 30 cubic yards, at least once every 130 cubic yards, and within the final truckload.

If the Engineer requests, submit split samples and fabricate test beams for the Engineer's testing.

For determining early age modulus of rupture, cure beams under the same conditions as the pavement until 1 hour before testing. Cure beams fabricated for the 7-day test under California Test 524. The Engineer uses modulus of rupture test results for accepting or rejecting the replacement pavement and pay factor adjustment for low modulus of rupture.

Dispose of materials resulting from the construction of the test beams, temporary roadway structural section, and rejected replacement pavement under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Weighmaster Certificates

Weighmaster certificates for RSC, regardless of the proportioning method used, must include the information necessary to trace the manufacturer and the manufacturer's lot number for the cement being used. If proportioned into fabric containers, the weighmaster certificates for the cement must contain date of proportioning, location of proportioning, and actual net draft cement weight. If proportioned at the pour site from a storage silo, the weighmaster certificates must contain date of proportioning, location of proportioning, and the net draft cement weight used in the load.

Engineer's Acceptance for Modulus of Rupture

RSC pavement must develop a minimum modulus of rupture of 400 psi before opening to traffic. RSC pavement must develop a minimum modulus of rupture of 600 psi 7 days after placement. The Engineer may accept RSC pavement that does not attain the specified moduli of rupture as specified in "Pay Factor Adjustment for Low Modulus of Rupture." The Engineer determines the modulus of rupture by testing 3 beam specimens under California Test 524 and averaging the results. You may fabricate beam specimens using an internal vibrator under ASTM C 31. No single test represents more than that day's production or 100 cubic yards, whichever is less.

If modulus of rupture at early age is determined using beam specimens, cure them under atmospheric conditions that are within 5 °F of the pavement. The Engineer determines modulus of rupture at other ages using beams cured and tested under California Test 524 except place them in sand from 5 to 10 times the final set time or 24 hours, whichever is earlier. The Engineer performs the testing to determine modulus of rupture values of the RSC pavement.

Pay Factor Adjustment for Low Modulus of Rupture

If planned replacement pavement thickness is less than 10 inches, the Engineer adjusts payment for RSC for modulus of rupture as follows:

1. Payment for RSC with a modulus of rupture of 400 psi or greater before opening to traffic and 7-day modulus of rupture of 600 psi or greater is not adjusted.
2. Payment for RSC with a 7-day modulus of rupture less than 500 psi is not adjusted and no payment is made. Remove this RSC and replace it at your expense with RSC that complies with the specifications.
3. Payment for RSC with a modulus of rupture less than 300 psi before opening to traffic is not adjusted and no payment is made. Remove this RSC and replace it at your expense with RSC that complies with the specifications.
4. Payment for RSC with a modulus of rupture of 300 psi or greater before opening to traffic and a 7-day modulus of rupture greater than or equal to 500 psi is reduced by the percentage in the pay table for the quantity represented by the tests.

Percentage Pay Table

Modulus of Rupture (psi) at opening to traffic	7-Day Modulus of Rupture (psi)		
	Greater than or equal to 600	Less than 600 and greater than or equal to 550	Less than 550 and greater than or equal to 500
Greater than or equal to 400	100%	95%	90%
Less than 400 and greater than or equal to 350	95%	95%	90%
Less than 350 and greater than or equal to 300	80%[a]	80%[a]	80%[a]

[a] The Engineer rejects any RSC area that develops 1 or more transverse cracks within 21 days after placement. Remove this RSC at your expense and replace it with RSC that complies with the specifications. A transverse crack is a crack running from one longitudinal edge of the panel to the other.

Where planned replacement pavement nominal thickness is 10 inches or greater, the Engineer adjusts payment for RSC for low modulus of rupture tests as follows:

1. RSC with modulus of rupture of 333 psi or greater before the lane is opened to the traffic and 7-day modulus of rupture of 600 psi or greater is not adjusted.
2. Payment for RSC with a 7-day modulus of rupture of less than 500 psi is not adjusted and no payment is made. Remove this RSC and replace it at your expense with RSC that complies with the specifications.
3. Payment for RSC with modulus of rupture of less than 260 psi before opening to traffic is not adjusted and no payment is made. Remove this RSC and replace it at your expense with RSC that complies with the specifications.
4. Payment for RSC with modulus of rupture of 260 psi or greater before opening to traffic and a 7-day modulus of rupture greater than or equal to 500 psi will be reduced by the percentage in the pay table for the quantity represented by the tests.

Percentage Pay Table

Modulus of Rupture (psi) at opening to traffic	7-Day Modulus of Rupture (psi)		
	Greater than or equal to 600	Less than 600 and greater than or equal to 550	Less than 550 and greater than or equal to 500
Greater than or equal to 333	100%	95%	90%
Less than 333 and greater than or equal to 290	95%	95%	90%
Less than 290 and greater than or equal to 260	80%[a]	80%[a]	80%[a]

Note:

[a] The Engineer rejects any RSC area that develops 1 or more transverse cracks within 21 days after placement. Remove this RSC at your expense and replace it with RSC that complies with the specifications. A transverse crack is a crack running from one longitudinal edge of the panel to the other.

MATERIALS

Temporary Roadway Structural Section

Aggregate Base

Aggregate base for temporary roadway structural section must be produced from any combination of broken stone, crushed gravel, natural rough-surfaced gravel, reclaimed concrete and sand. Grading of aggregate base must comply with the 3/4-inch maximum grading specified in Section 26-1.02A, "Class 2 Aggregate Base," of the Standard Specifications.

Hot Mix Asphalt

For hot mix asphalt:

1. Choose the 3/8-inch or 1/2-inch HMA Type A or Type B aggregate gradation under Section 39-1.02E, "Aggregate," of the Standard Specifications.
2. Minimum asphalt binder content must be 6.8 percent for 3/8-inch aggregate gradation and 6.0 percent for 1/2-inch aggregate gradation.
3. Choose asphalt binder Grade PG 64-10, PG 64-16, or PG 70-10 under Section 92, "Asphalts," of the Standard Specifications.

Bond Breaker

Bond breaker must be one of the following:

1. White curing paper under ASTM C 171
2. White opaque polyethylene film under ASTM C 171, except that the minimum thickness must be 6 mils
3. Paving asphalt, Grade PG 64-10, under Section 92, "Asphalts," of the Standard Specifications
4. Curing compound (5) under Section 90-7.01b, "Curing Compound Method," of the Standard Specifications

Rapid Strength Concrete

Section 40-3.03, "Proportioning," and Section 90-1.01, "Description," of the Standard Specifications do not apply to RSC.

Choose the combined aggregate grading for RSC from either the 1-1/2 inch maximum or the 1-inch maximum combined grading under Section 90-3.04, "Combined Aggregate Gradings," of the Standard Specifications.

Produce RSC with hydraulic cement. Hydraulic cement must comply with ASTM C 219 and:

Hydraulic Cement

Test Description	Test Method	Requirement
Contraction in air	California Test 527,W/C Ratio = 0.39 ±0.010	0.053 %, max.
Mortar expansion in water	ASTM C 1038	0.04 %, max.
Soluble chloride[a]	California Test 422	0.05 %, max.
Soluble sulfates[a]	California Test 417	0.30 %, max.
Thermal stability	California Test 553	60 %, min.
Compressive strength @ 3 days	ASTM C 109	2,500 psi

Note:

[a] Perform test on a cube specimen fabricated under ASTM C 109. Cure the specimen at least 14 days and then pulverized to 100 percent passing the No. 50 sieve.

You may use Type C accelerating chemical admixtures as specified in Section 90-4, "Admixtures," of the Standard Specifications. In addition to the admixtures listed on the Department's current list of approved admixtures, you may request citric acid or borax. If used, include chemical admixtures in any specified testing.

CONSTRUCTION

Removing Existing Pavement

The Engineer determines the exact limits of replace concrete pavement.

Remove existing concrete pavement and replaced it with concrete pavement within the same work period. If you remove existing pavement and you are unable to construct, finish, and cure concrete pavement before the specified traffic opening time, construct a temporary roadway structural section.

Saw cut the outline of concrete pavement to be removed with a power-driven saw except where adjacent to an asphalt concrete shoulder. Do not saw cut within concrete pavement slabs more than 2 days before concrete pavement slab removal. If you saw cut in work shifts that are before the actual removal work shift, do not make saw cuts parallel or diagonal to the traveled way. Saw cut so that traffic will not dislodge any pieces or segments.

Remove concrete pavement by non-impacting methods. Remove each pavement panel in 1 or more piece without disturbing or damaging the underlying base.

Inside the sawed outline, do not impact the surface within 18 inches of pavement to remain in place. Remove pavement and base without damage to pavement remaining in place.

Dispose of removed materials under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

The finished surface of the remaining material must not extend above the grade established by the Engineer.

Temporary Roadway Structural Section

Place hot mix asphalt where existing pavement is replaced for construction of a temporary roadway structural section. The quantity must be equal to the quantity of pavement removed during the work shift. If you place temporary roadway structural section, it must be maintained and later removed as the first order of work when replace concrete pavement activities resume. The temporary roadway structural section must consist of hot mix asphalt-.RSC not conforming to the specifications may be used for temporary roadway structural section with the Engineer's approval.

Spread and compact hot mix asphalt by methods that produce a well-compacted, uniform base, with a surface of uniform smoothness, texture and density. Surfaces must be free from pockets of coarse or fine material. You may spread hot mix asphalt each in one layer. The finished surface of hot mix asphalt must not vary more than 0.05 foot from the lower edge of a 12-foot long straightedge placed parallel with the centerline and must match the elevation of existing concrete pavement along the joints between the existing pavement and temporary surfacing.

When no longer required, dispose of standby material or stockpiled material for temporary roadway structural sections under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Rapid Strength Concrete

General

Concrete pavement penetration specified in Section 90-6.06, "Amount of Water and Penetration," of the Standard Specifications does not apply to RSC.

RSC must develop the specified opening age and 7-day modulus of rupture strengths.

Proportioning

Weighing, measuring, and metering devices used for proportioning materials must comply with Section 9-1.01, "Measurement of Quantities," of the Standard Specifications.

For central batch plants, indicators for weighing and measuring systems such as over and under dials must be grouped so that each indicator's smallest increment can be accurately read from the control point of the proportioning operation. In addition, indicators for weighing and measuring cement batched from a remote weighing system must be placed so that each indicator can be accurately read from the control point of the proportioning operation.

Weighing equipment must be insulated from other equipment's vibration or movement. When the plant is operating, each draft's material weight must not vary from the designated weight by more than the specified tolerances. Each scale graduation must be 0.001 of the usable scale capacity.

Aggregate must be weighed cumulatively. Equipment for weighing aggregate must have a zero tolerance of ±0.5 percent of the aggregate's designated total batch weight. Equipment for the separate weighing of the cement must have a zero tolerance of ±0.5 percent of the cement's designated individual batch draft. Equipment for measuring water must have a zero tolerance of ±0.5 percent of the water's designated weight or volume.

The weight indicated for any individual batch of material must not vary from the preselected scale setting by more than:

Batch Weight Tolerances

Material	Tolerance
Aggregate	±1.0 percent of designated batch weight
Cement	±0.5 percent of designated batch weight
Water	±1.5 percent of designated batch weight or volume

Proportioning consists of dividing the aggregate into the specified sizes and storing them in separate bins, and then combining the aggregate with cement and water. Proportion dry ingredients by weight. Proportion liquid ingredients by weight or volume.

Handle and store aggregates under Section 90-5.01, "Storage of Aggregates," of the Standard Specifications. Proportion liquid admixtures under Section 90-4.10, "Proportioning and Dispensing Liquid Admixtures," of the Standard Specifications.

Control aggregate discharged from several bins with gates or mechanical conveyors. The means of discharge from the bins and from the weigh hopper must be interlocked so that no more than 1 bin can discharge at a time, and the weigh hopper cannot be discharged until the required quantity from each of the bins has been deposited in the weigh hopper.

At the time of batching, dry and drain aggregates to a stable moisture content. Do not proportion aggregates with visible separation of water from the aggregate during proportioning. At the time of batching, the free moisture content of fine aggregate must not exceed 8 percent of its saturated, surface-dry weight.

If the proportioning plant has separate supplies of the same size group of aggregate with different moisture content, specific gravity, or surface characteristics affecting workability, exhaust 1 supply before using another supply.

Keep cement separated from the aggregate until discharged into the mixer. When discharged into the mixer, cement must be free of lumps and clods. Before reuse, clean fabric containers used for transportation or proportioning of cement.

Weigh systems for proportioning aggregate and cement must be individual and distinct from other weigh systems. Each weigh system must have a hopper, a lever system, and an indicator.

For batches with a volume of 1 cubic yard or more, proportioning must comply with one of the following methods:

1. Batch the ingredients at a central batch plant and charge them into a mixer truck for transportation to the pour site. Proportion ingredients under Section 90-5, "Proportioning," of the Standard Specifications.
2. Batch the ingredients except the cement at a central batch plant and charge them into a mixer truck for transportation to a cement silo and weigh system, which must proportion cement for charging into the mixer truck.
3. Batch ingredients except the cement at a central batch plant and charge them into a mixer truck for transportation to a location where pre-weighed containerized cement is added to the mixer truck. The cement pre-weighing operation must utilize a platform scale. The platform scale must have a maximum capacity of 2.75 tons with a maximum graduation size of 1 pound. Pre-weigh cement into a fabric container. The minimum amount of cement to be proportioned into any single container must be 1/2 of the total amount required for the load of RSC being produced.

When ordered by the Engineer, determine the gross weight and tare weight of truck mixers on scales designated by the Engineer.

Install and maintain in operating condition an electrically actuated moisture meter. The meter must indicate on a readily visible scale the changes in the fine aggregate moisture content as it is batched. The meter must have a sensitivity of 0.5 percent by weight of the fine aggregate.

Obtain the Engineer's acceptance before mixing water into the concrete during hauling or after arrival at the delivery point. If the Engineer accepts additional water be incorporated into the concrete, the drum must revolve not less than 30 revolutions at mixing speed after the water is added and before starting discharge. Measure water added to the truck mixer at the job site through a meter in compliance with Section 9-1.01, "Measurement of Quantities," of the Standard Specifications.

Bond Breaker

Place bond breaker between replacement pavement and existing lean concrete base, cement treated base, or new base replacement layer.

If you use curing paper or polyethylene film, place it in a wrinkle free manner. Overlap adjacent sheets a minimum of 6 inches.

If you use curing compound or paving asphalt, before application remove foreign and loose materials remaining from slab removal.

If you use paving asphalt, do not add water before applying asphalt to the base surface. Apply the paving asphalt in one even application at a rate from 0.02 to 0.10 gallon per square yard over the entire base surface area. Do not place concrete pavement until the paving asphalt has cured.

If you use curing compound, apply it in 2 separate applications. Apply each application evenly at a rate from 0.07 to 0.11 gallon per square yard over the entire base surface area.

Spreading, Compacting, and Shaping

The specifications for pavement thickness in Section 40, "Concrete Pavement," of the Standard Specifications do not apply.

You may use metal or wood side forms. Wood side forms must not be less than 1-1/2 inches thick. Side forms must be of sufficient rigidity, both in the form and in the connection with adjoining forms, that movement will not occur under forces from subgrading and paving equipment or from the pressure of concrete.

Side forms must remain in place until the pavement edge no longer requires the protection of forms. Clean and oil side forms before each use.

After you deposit the RSC on the subgrade, consolidate RSC with high-frequency internal vibrators. Consolidate adjacent to forms and across the full paving width. Place RSC as nearly as possible to its final position. Do not use vibrators for extensive shifting of RSC.

Spread and shape RSC with powered finishing machines supplemented by hand finishing.

After you mix and place RSC, do not add water to the surface to facilitate finishing. Use surface finishing additives as recommended by the manufacturer of the cement after their use is approved by the Engineer.

Joints

Before placing RSC against existing concrete, place 1/4-inch thick commercial quality polyethylene flexible foam expansion joint filler across the original transverse and longitudinal joint faces and extend the excavation's full depth. Place the top of the joint filler flush with the top of the pavement. Secure joint filler to the joint face of the existing pavement to prevent the joint filler from moving during the placement of RSC.

Construct transverse contraction joints in pavement widenings to match the spacing and skew of the contraction joints in the adjacent existing pavement. Where the existing transverse contraction joint spacing in an adjacent lane exceeds 15 feet, construct an additional transverse contraction joint midway between the existing joints. Complete sawing of contraction joints within 2 hours of completion of final finishing. Cut contraction joints a minimum 2-3/4 inches deep.

Final Finishing

If the Engineer determines by visual inspection the final texturing may not comply with the specifications for coefficient of friction, the Engineer tests to determine coefficient of friction. Open the pavement to traffic and allow 5 days after concrete placement for the Department to test for coefficient of friction. If pavement does not comply with the specifications for coefficient of friction, groove the pavement under Section 42-1.02, "Construction," of the Standard Specifications. Perform grooving before the installation of any required edge drains adjacent to the areas to be grooved.

Profiles of the completed pavement surface and the Profile Index specified in Section 40-1.03J, "Profilograph Test Procedure," of the Standard Specifications are not required. The Engineer measures smoothness with a straightedge.

Straightedge smoothness specifications do not apply to the pavement surface within 12 inches of existing concrete pavement except you must place a straightedge longitudinally with the midpoint coincident with the transverse contact joint. Correct pavement at contact joints not in compliance with straightedge smoothness specifications within 48 hours by grinding.

Curing Method

Use the curing method recommended by the manufacturer of the cement for replacement pavement.

Replace Existing Pavement Delineation

Replace any existing pavement delineation removed, obliterated, or damaged by the work involved in replacing concrete pavement. Comply with the specifications for new delineation.

MEASUREMENT AND PAYMENT

Replace concrete pavement (Rapid Strength Concrete) is measured and paid for in the same manner specified for concrete pavement in Sections 40-4.01, "Measurement," and 40-4.02, "Payment," of the Standard Specifications.

The Engineer adjusts payment for replace concrete pavement (Rapid Strength Concrete) in compliance with "Pay Factor Adjustment for Low Modulus of Rupture."

Full compensation for the pre-operation conference and removing existing pavement delineation markers is included in the contract price paid per cubic yard for replace concrete pavement (Rapid Strength Concrete) and no additional compensation will be allowed therefor.

Full compensation for removing and disposing of existing concrete pavement and underlying base, constructing trial slabs, production, process and quality control assurance, inspection, sampling, and testing, furnishing and placing bond breaker, furnishing and disposing of standby materials for temporary roadway structural section, constructing, maintaining, removing, and disposing of temporary roadway structural section, removing, maintaining, and replacing pavement delineation markersare included in the contract price paid per cubic yard for replace concrete pavement (Rapid Strength Concrete) and no additional compensation will be allowed therefor.

If RSC does not conform to the mix design requirements or the specifications, the Engineer orders you to provide extra samples and testing. The Engineer determines the costs for sampling, fabricating, transporting, and testing extra samples under Section 4-1.03D, "Extra Work," of the Standard Specifications. If the extra samples do not comply with the specifications, these costs are at your expense. If the extra samples comply with the specifications, the Engineer pays you for these costs.

BID ITEM LIST

03-2F0404

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	070012	PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	LUMP SUM	LUMP SUM	
2	070018	TIME-RELATED OVERHEAD	WDAY	120		
3	074016	CONSTRUCTION SITE MANAGEMENT	LS	LUMP SUM	LUMP SUM	
4	074017	PREPARE WATER POLLUTION CONTROL PROGRAM	LS	LUMP SUM	LUMP SUM	
5	074032	TEMPORARY CONCRETE WASHOUT FACILITY	EA	1		
6	074041	STREET SWEEPING	LS	LUMP SUM	LUMP SUM	
7	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM	LUMP SUM	
8	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM	LUMP SUM	
9	128650	PORTABLE CHANGEABLE MESSAGE SIGN	LS	LUMP SUM	LUMP SUM	
10	150771	REMOVE ASPHALT CONCRETE DIKE	LF	750		
11	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	48,100		
12	190110	LEAD COMPLIANCE PLAN	LS	LUMP SUM	LUMP SUM	
13	374002	ASPHALTIC EMULSION (FOG SEAL COAT)	TON	41		
14	374207	CRACK TREATMENT	LNMI	45		
15	390095	REPLACE ASPHALT CONCRETE SURFACING	CY	1,350		
16	390137	RUBBERIZED HOT MIX ASPHALT (GAP GRADED)	TON	2,460		
17	390138	RUBBERIZED HOT MIX ASPHALT (OPEN GRADED)	TON	790		
18	394048	PLACE ASPHALT CONCRETE DIKE (TYPE E)	LF	750		
19	397005	TACK COAT	TON	20		
20	401108	REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE)	CY	790		

REVISED PER ADDENDUM NO. 4 DATED NOVEMBER 16, 2011

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
21	413115	SEAL JOINT (EXISTING CONCRETE PAVEMENT)	LF	363,000		
22	420201	GRIND EXISTING CONCRETE PAVEMENT	SQYD	49,200		
23	021742	GRIND AND GROOVE EXISTING CONCRETE PAVEMENT	SQYD	280,000		
24	840504	4" THERMOPLASTIC TRAFFIC STRIPE	LF	141,000		
25	840506	8" THERMOPLASTIC TRAFFIC STRIPE	LF	13,800		
26	840508	8" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 12-3)	LF	10,400		
27	840515	THERMOPLASTIC PAVEMENT MARKING	SQFT	1,380		
28	840525	4" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 36-12)	LF	247,000		
29	840526	4" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 17-7)	LF	6,990		
30	850111	PAVEMENT MARKER (RETROREFLECTIVE)	EA	8,630		
31	860090	MAINTAINING EXISTING TRAFFIC MANAGEMENT SYSTEM ELEMENTS DURING CONSTRUCTION	LS	LUMP SUM	LUMP SUM	
32	021743	REMOVE TRAFFIC MONITORING STATION (COUNT)	LS	LUMP SUM	LUMP SUM	
33	021744	REPLACE LOOP DETECTORS	LS	LUMP SUM	LUMP SUM	
34	021745	MODIFY WEIGH STATION BYPASS SYSTEM	LS	LUMP SUM	LUMP SUM	
35	BLANK					
36	390136	MINOR HOT MIX ASPHALT	TON	20		
37	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

TOTAL BID: $_____